



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,875	03/26/2004	Naoki Imachi	MAM-041	7613
20374	7590	11/28/2007		
KUBOVCIK & KUBOVCIK SUITE 710 900 17TH STREET NW WASHINGTON, DC 20006			EXAMINER WEINER, LAURA S	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/809,875

Applicant(s)

IMACHI ET AL.

Examiner

Laura S. Weiner

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1- have been considered but are moot in view of the new ground(s) of rejection. The rejection of claims 1-9 under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling because the materials of the separator are critical or essential to the practice of the invention was not included in the claim(s) is not enabled by the disclosure has been withdrawn because of the amendment to the claims.

Claim Rejections - 35 USC § 112

2. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The addition of the “separator **is at least partially made of** polypropylene or polyethylene” adds new matter to the claims. There is no support for “partially” but there is support for the material of the separator comprising polypropylene or polyethylene.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-5, 8-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oba (JP 2002025526, abstract).

Oba teaches a battery comprising a positive electrode, a negative electrode and not less than two kinds of separators which has a shutdown property where the shutdown temperatures of the separators are different by not less than 10 degrees C. Oba teaches in the patent on page 4, column 6, [0036] that the cathode comprises LiCoO_2 , LiNiO_2 , $\text{LiNi}_y\text{Co}_{1-y}\text{O}_2$ or $\text{LiMn}_2\text{O}_{1-y}\text{O}_2$. Oba teaches that the separator comprises PE/PP having a shutdown temperature in the range of 150-155 degrees C.

Since Oba teaches the same electrolyte comprising a separator comprising PE/PP having a shut-down temperature of 162 degrees C or less then inherently the same separator having an area contraction ratio at 120 degrees C being 15% or less or

Art Unit: 1795

having the difference between the film-breaking temperature and the shut-down temperature being 20 degrees C or higher at the time when the temperature rises at 15 degrees C/min must also be obtained.

In addition, the presently claimed property of a separator having an area contraction ratio at 120 degrees C being 15% or less or having the difference between the film-breaking temperature and the shut-down temperature being 20 degrees C or higher at the time when the temperature rises at 15 degrees C/min would have obviously have been present once the Oba product is provided. *In re Best*, 195 USPQ 433 (CCPA 1977).

6. Claims 2-3, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oba (JP 2002025526, abstract).

Oba teaches a battery comprising a positive electrode, a negative electrode and not less than two kinds of separators which has a shutdown property where the shutdown temperatures of the separators are different by not less than 10 degrees C. Oba teaches in the patent on page 4, column 6, [0036] that the cathode comprises LiCoO_2 , LiNiO_2 , $\text{LiNi}_y\text{Co}_{1-y}\text{O}_2$ or $\text{LiMn}_2\text{O}_{1-y}\text{O}_2$. Oba teaches that the separator comprises PE/PP having a shutdown temperature in the range of 150-155 degrees C.

The presently claimed property of a separator having an area contraction ratio at 120 degrees C being 15% or less or having the difference between the film-breaking temperature and the shut-down temperature being 20 degrees C or higher at the time when the temperature rises at 15 degrees C/min would have obviously have been

Art Unit: 1795

present once the Oba product is provided. *In re Best*, 195 USPQ 433 (CCPA 1977).

Oba teaches the claimed invention teaching that the positive electrode can comprise lithium manganese oxide, lithium cobalt oxide or lithium nickel complex oxide but does not specifically teach that the positive electrode comprises lithium manganese oxide with lithium cobalt oxide or lithium nickel complex oxide or that 50 wt% of lithium manganese oxide is present with 50 wt% of lithium cobalt oxide or lithium nickel complex oxide.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use both materials lithium manganese oxide and lithium cobalt or lithium nickel complex oxide in the positive electrode taught by Oba because it is prima facie obvious to combine two compositions each of which is taught by prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose. See *In re Kerkhoven*, 205 USPQ 1069; *In re Susi*, 169 USPQ 423.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use 50 wt% of lithium manganese oxide and 50 wt% of lithium cobalt oxide or lithium nickel complex oxide, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use 50 wt% of lithium manganese oxide and 50 wt% of lithium cobalt oxide or lithium nickel complex oxide, since it has been held that discovering an

Art Unit: 1795

optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

7.

Conclusion

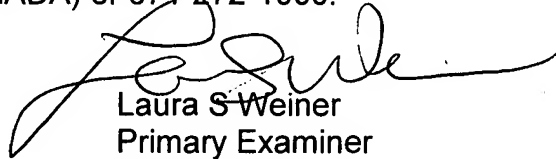
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S. Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Laura S. Weiner
Primary Examiner
Art Unit 1795

November 23, 2007